permeable to acid is shown by the fact that seeds[4] of lemons (which are separated from the acid by the walls of the sacs) frequently germinate while still in the carpels, though they will not germinate in lemon juice several times diluted.

It seems probable that this condition is a general one in acid tissues. The acid and ferment are separated in the tissue probably in a variety of ways, but the grinding destroys the separating surface, bringing acid and ferment in contact and inhibiting the action of the latter.

The general effects of acids and alkalies on oxidase ferments are now under investigation and will be reported on later.—G. B. REED, *Laboratory of Plant Physiology, Harvard University.*

THE TYPE SPECIES OF DANTHONIA

In a recent paper,[5] Professor A. S. HITCHCOCK attempts to show that the type species of *Danthonia* DC. is *Avena spicata* L. instead of *Festuca decumbens* L. If his arguments are to stand, stability in nomenclature will be an impossibility, for they are based purely on personal opinion. If a case in which there is doubt as to the type of a genus is to be decided on an interpretation of what the author may have thought most representative, it will never be disposed of, for this decision may vary with each succeeding systematist who faces the problem.

As emphasized at the Vienna Congress, one of the fundamental points in nomenclature[6] "is to aim at fixity of names," and "in the absence of rule" (by which to bring this about) "established custom becomes law." However logical, therefore, Professor HITCHCOCK'S decision as to the type of *Danthonia* may be, it is essential for the sake of nomenclatural stability that the accepted custom of selecting the first species described (when the type is not indicated) be adhered to. Otherwise, as pointed out by Professor HITCHCOCK, some other botanist may say, "I favor selecting" *D. provincialis* DC. as the type.

Now *Festuca decumbens* is not only the first species described, but Professor HITCHCOCK fails to show that DE CANDOLLE did not consider it completely congeneric with his *D. provincialis*. It is provided with an awn, even though rudimentary, and, to quote, "it is evident that the author considered the awn to be one of the important distinguishing characters of his new genus." DE CANDOLLE'S suggestion that *Avena*

[4] The seeds of all the *Citrus* fruits examined showed an abundance of oxidases.

[5] The type species of *Danthonia*. BOT. GAZ. **57**:328. 1914.

[6] Vienna Rules, 35. 1905.

spicata should be included surely does not indicate that he regarded it as *more* representative of his *Danthonia* than *decumbens*, since his generic description provides for the latter ("awn sometimes long, sometimes rudimentary").

The adoption of *Avena spicata* L. as the type, therefore, is seen to be purely arbitrary, since such action is based on the present interpretation of the genus.—AVEN NELSON and J. FRANCIS MACBRIDE.

MATURATION IN VICIA

(PRELIMINARY NOTE)

The following preliminary note summarizes the results so far obtained in a study which has been temporarily interrupted. Although many details remain to be worked out, the following points seem clear.

In the somatic cells of *Vicia Faba* there are twelve chromosomes; two of them are about twice as long as the other ten. How this size difference arose is not known, but there is some reason to believe that each long chromosome may have been formed originally by the coherence of two ordinary ones.

In the early prophases of the heterotypic mitosis in the pollen mother cells, the chromosomes take the form of long slender threads (leptonema), which become paired side by side (zygonema). These double threads shorten and thicken (pachynema), the association of the two members of each pair becoming very intimate. The nature of this union has yet to be determined. Synizesis occurs during these prophase stages as a natural phenomenon.

At diakinesis there are six gemini; one of them is about twice as large as the other five, showing that the two large chromosomes seen in the somatic cells have paired with each other. At the first maturation division the members of each pair pass to opposite poles, bringing about the reduction. In the second, or homeotypic, mitosis all the chromosomes divide longitudinally, so that each microspore receives six chromosomes, five short and one long.

The megaspore mother cell has not been examined, but in the light of the above data on somatic and pollen cells it seems probable that similar phenomena occur in the maturation of the megaspore.

The results here recorded are of special interest in that they furnish further evidence in favor of the theory that the two chromosomes which pair and separate at the first maturation division come one from each parent, and are in some sense homologous.—LESTER W. SHARP, *University of Chicago.*